

**TITLE OF THE INVENTION**  
**HUMAN UNCOUPLING PROTEIN 3**

**5 ABSTRACT OF THE DISCLOSURE**

An isolated nucleic acid molecule is disclosed which encodes a novel human uncoupling protein (UCP3), and related recombinant expression vectors, recombinant host cells and substantially purified forms of the UCP3 protein. The isolated nucleic acid and proteins disclosed herein will be useful in methods associated with identifying compounds which modulate energy expenditure and body weight regulation, as well as effecting diseases such as obesity and diabetes as well as mitochondria-associated hypermetabolism. Additionally, the isolated nucleic acids of the present invention are candidates for gene therapy of a mammalian host, including humans.

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